

TRANSACTIONS
OF THE
NEW YORK SURGICAL SOCIETY.

Stated Meeting, February 10, 1909.

The President, DR. JOSEPH A. BLAKE, in the Chair.

TREPHINING FOR JACKSONIAN EPILEPSY.

Dr. Otto G. T. KILIANI presented a man, twenty-four years of age, who twenty-two years ago sustained an injury, receiving a compound fracture in the left frontal region. He subsequently developed frequent attacks of epilepsy of the Jacksonian type, for the relief of which he was referred to Dr. Kiliani, who trephined the skull on January 7, 1909.

The operation was done with the aid of the Borchardt-Sudek fraze, slightly modified by Dr. Kiliani. By this method, which he demonstrated, the skull was entered more rapidly and with less violence than by the Gigli saw or any other method with which he was acquainted, and he now employed it to the exclusion of all other methods. In the case presented, the patient showed absolute freedom from shock, which was usually so pronounced after other methods of opening the skull. Upon exposing the dura it was found whitened and adherent. Multiple needle punctures failed to reveal the presence of an abscess. The dura was thereupon resected and the resulting gap covered with a layer of thin silver film, which was left *in situ*. The patient was able to leave the hospital two weeks after the operation. He had had two or three epileptic seizures since the operation, which had been done so recently that its final outcome was still in doubt. The case was shown chiefly to demonstrate the Borchardt-Sudek method of entering the skull, and the ease with which it could be accomplished.

EXCLUSION OF COLON FOR NEW GROWTH.

DR. JOSEPH A. BLAKE presented a man, 45 years old, who entered Roosevelt Hospital on November 11, 1908, suffering from a suppurating adenocarcinoma of the descending colon, and partial obstruction. At operation, on the following day, the abscess was incised, and a part of its wall, which was adherent to the abdominal paries, was removed for microscopical examination. The abscess contained several ounces of foul-smelling pus suggesting connection with the intestine, and it was thought at the time that a fistula would result; but this did not occur and the wound gradually healed. The examination of the piece removed proved it to be adenocarcinoma.

The symptoms of obstruction increased and on December 1 became urgent. On this day, through a median incision, the ileum was divided about six inches from the ileo-caecal valve and the oral end implanted by means of a Murphy button into the side of the sigmoid flexure of the colon below the growth, which was widely adherent and apparently irremovable. The aboral end of the ileum was brought out of the upper end of the abdominal incision; the clamp used to occlude it, being left on, retained it in place. The wound was closed without drainage and healed by first intention.

The convalescence was exceedingly stormy. For six days, the picture was that of gastromesenteric ileus or obstruction high in the small intestine. Lavage was practised several times daily during this period. The patient's condition was so bad that reopening the wound to find the cause was only thought of to be abandoned. During all this time, gas and feces were obtained from the rectum in response to irrigations. The colon above the obstruction was washed out every three hours through the end of the ileum lying in the wound, and water and predigested foods were introduced. At the end of a week, the ileus disappeared, and the patient was discharged on Dec. 20, nineteen days after the second operation. The bowels are now acting normally and regularly.

The operation has several features to recommend its employment in irremovable growths above the pelvic colon. It avoids establishment of an artificial anus, with its attendant discomforts; and, if there is any chance of removing the growth, it can be done later with a free hand without the necessity of making

an anastomosis. It is also available for exclusion of the intestine in ulcerative colitis and possibly in pernicious anaemia, if, as some believe, the latter may be caused by intestinal toxæmia. It is safer than excision of the entire colon, and may be used as a substitute for that operation where removal of the colon is not absolutely indicated. It can hardly be recommended for constipation, since it is a somewhat difficult operation and must be attended with considerable danger.

Since operating upon this patient, Dr. Blake said he had done the same operation for the same condition in another patient with equally good results.

EXTENSIVE PERITONITIS.

DR. JOHN ROGERS presented a woman, 21 years old, who, when she was admitted to Gouverneur Hospital, had a temperature of 103° and a pulse of 120, with symptoms pointing to a kidney infection. The kidney was exposed with negative results, and when Dr. Rogers came on service and first saw the patient she was apparently convalescing. Suddenly, about two weeks after the exposure of the kidney, his attention was called to the patient by the nurse. An examination showed evidence of an extensive peritonitis, which had apparently existed about twelve hours. On opening the abdomen, he found a great deal of free pus, with extensive peritonitis. This apparently originated in a ruptured retrocolic abscess connected with the appendix, and the presumption was that the woman's original attack was one of appendicitis from which she was recovering when this secondary attack occurred.

After flushing out the abdomen, Dr. Rogers said he made an attempt to remove the appendix, but did not persist on account of its retrocolic location. Then, through a rubber catheter, which was passed in various directions in the abdominal cavity, he injected two ounces of lactic-acid bacilli, as prepared under the direction of Dr. Chas. E. North. The abdomen was then entirely closed. Within twelve hours the patient's temperature dropped from 103° to 99°; and although she was much prostrated, the case progressed favorably until two weeks later, when she had a secondary collection of pus in the opposite side of the abdomen. This was opened and drained, and the further recovery of the patient was uneventful.

Dr. Rogers said he did not wish to be understood as attributing the recovery of this patient to the lactic-acid bacilli, which he had now used in two or three other cases with apparently beneficial results. Still, he was not yet convinced of the efficacy of the treatment and presented the case chiefly as an example of the entire harmlessness and apparent beneficence in this use of the lactic-acid bacilli.

BLADDER CALCULUS.

DR. ELLSWORTH ELIOT, JR., presented a woman, 60 years old, who was admitted to the Presbyterian Hospital in December, 1908, with the following history: About a year ago, without assignable cause, she developed some bladder trouble which manifested itself in pain over the bladder region and in the urethra during micturition. This pain was well localized and not intense. It came on sometimes before, sometimes after, and sometimes during micturition. The urine was voided in small quantities eight or twelve times daily, and was fairly clear. She stated that about six months prior to her admission she had been operated on at St. Vincent's Hospital for some obscure pelvic lesion, and since that time the bladder and urethral symptoms seemed to have become more severe.

For two weeks prior to her admission to the Presbyterian Hospital she had suffered from chilly sensations. The urine was cloudy and had a strong odor, and at times contained small quantities of blood. There was no history of gravel, no interruption of the stream, no dribbling.

An examination of the bladder with the searcher showed the presence of a calculus. This had been previously revealed by an X-ray, which in addition to the shadow above the pubes showed a second shadow near the spine of the ischium. The question naturally arose whether the stone in the bladder was the only stone, or whether there was also a stone in the ureter. Through a suprapubic incision, the lateral wall of the bladder was exposed, but owing to the large amount of fat, the vesical end of the ureter could not be satisfactorily reached. The peritoneal cavity was therefore opened, and the ureter followed down from its crossing of the external iliac to the bladder. Simultaneously, and with a finger in the peritoneal cavity as a guide, the extraperitoneal incision was deepened to the junction of ureter and bladder. In spite of a very thorough manipulation, no ureteral

calculus could be detected, neither was there any dilatation of the ureter. The peritoneal cavity was then sutured and closed and the bladder opened above the pubis and the calculus removed. A soft catheter was left in the bladder for four days after the operation. The patient made an uneventful recovery. Her urine cleared up, and the pain and frequency disappeared.

An X-ray taken subsequent to the operation showed no vesical shadow, but still showed the shadow near the spine of the ischium which had been taken for a ureteral calculus. Dr. Eliot said he had seen similar shadows in a number of instances in patients who were X-rayed for other purposes. They were not as a rule in the line of the ureter, but occasionally so close to it that one could be easily misled. In the case in question he was convinced that the second shadow was not a ureteral calculus, but was due to slight thickening of that particular part of the pelvic bone or to some osseous focus in a pelvic ligament.

RUPTURED SPLEEN; SPLENECTOMY.

DR. ELLSWORTH ELIOT, JR., presented a man, 45 years old, who was brought to the Presbyterian Hospital in December, 1908, with the history of having been run over by a truck. On his arrival at the hospital, at 11 o'clock in the morning, his pulse and temperature were normal, and with the exception of a slight superficial abrasion over the left flank, he was apparently uninjured. He was carefully watched, however, his pulse being taken every fifteen minutes. For the first two hours after admission, it ranged about 80; then it gradually began to increase in frequency; and at the end of the third hour it had reached 90, and two hours later 100. The patient complained of very little pain; there was no vomiting nor shock.

About five hours after admission, with the pulse still increasing in frequency, the patient began to complain of acute pain; and there were rigidity and incipient dulness in the left flank. He was etherized, and an incision was made parallel with the costal margin. There was considerable free blood in the peritoneal cavity; and upon exposing the spleen, it was found to be almost bisected and bleeding. Its pedicle was seized with a clamp and ligated, and the spleen removed. The peritoneal cavity was then washed out, and a small counteropening made for drainage. The patient made an uneventful recovery. Dr. Eliot said that in this

case, as in several others of rupture of the spleen that he had seen, the spleen was anchored by old adhesions; and this he thought might be a factor in the rupture of this usually mobile organ.

The operation was followed by changes in the blood similar to those reported by the author in other cases of traumatic rupture of the spleen. There has been at no time any anaemic cachexia, nor evidence of thyroid or glandular enlargement.

Apart from this man's splenectomy wound, he showed the scar of an operation for hare-lip which had been done by the elder Gross in Philadelphia more than 40 years ago.

DR. F. W. MURRAY recalled a case of splenectomy for pistol-shot wound in which the symptoms of internal hemorrhage came on gradually and in which an incision similar to the one used by Dr. Eliot gave satisfactory access to the spleen. The general condition of the patient on admission was fair, and some pain on pressure below the left costal arch was noted. The entire abdominal wall was exceedingly rigid and suggested damage of the abdominal contents. The bullet entered the left side of the back and could be felt in the eighth or ninth intercostal space. After six hours' observation it was decided to operate, as it was evident that there was internal hemorrhage. The bullet was removed through a small incision parallel with and at the edge of the costal arch. Through an incision at the outer edge of the rectus and extending from the sternum to the level of the umbilicus the abdomen was opened and it was seen that there was hemorrhage from the spleen. The first incision was then prolonged upwards and inwards along the edge of the left costal arch up to the beginning of the second incision. The triangular flap thus formed was retracted downwards and outwards and a satisfactory approach to the spleen resulted. The spleen was removed, as it was almost bisected by the bullet, and an uneventful recovery followed the operation.

DR. L. W. HOTCHKISS said he had previously reported three cases of rupture of the spleen. In all of these cases, the spleen was removed either through a median or left median incision.

FRACTURE OF THE EXTERNAL CONDYLE OF THE HUMERUS.

DR. FRANK S. MATHEWS presented a boy, 8 years old, who was brought to St. Mary's Hospital for Children last summer with a fracture of the external condyle of the left humerus. He was

seen by the house surgeon, who was unable to effect reduction. The next morning, under ether, Dr. Mathews made an incision over the elbow and found that the fractured surface had been rotated outwards so that it lay immediately underneath the skin, while the articular surface of the fragment was in contact with the fractured surface of the humerus. The fragment had emerged through a rent in muscle and fascia to its position under the skin. It was this fascia which formed the barrier to reduction. Dr. Mathews had seen another patient with this accident two months after injury where there was non-union and the removal of the fragment was necessary. In the present case when the rent in the soft parts was retracted the fragment sprung back into place. The further course of the case was uneventful, and the functional result was practically perfect.

DR. GIBSON said he had seen a somewhat analogous condition in a fracture of the lower end of the femur in which there was a complete rotation of 180 degrees of the fragment. In this case the injury was the result of getting the leg caught in a hawser.

NEPHROTOMY AND URETERAL OBSTRUCTION.

DR. FRANK S. MATHEWS presented a boy, 7 years old, who was admitted to St. Mary's Hospital for Children, in the service of Dr. Dowd, about two years ago, with symptoms of appendicitis. Upon opening the abdomen, a small discrete abscess was found in the right iliac fossa; this was evacuated, the appendix was removed, and the wound healed promptly.

Before he was able to leave the hospital, he began to complain of an occasional stomach-ache; and about three weeks after the operation blood was temporarily found in the urine. He then began to have pain located in the left side. His temperature, which had fallen to normal, again became elevated, and there was abdominal rigidity. An X-ray was taken, with negative results. A second operation was thereupon decided on. On the night preceding this he had two convulsions, and his abdominal pain was intense, in spite of very large doses of chloral and morphine, and inhalations of chloroform and ether administered by the house surgeon.

On the following morning, under ether, the left kidney was found to be considerably enlarged. An incision was made over it, and the kidney was easily delivered through the wound. As

this was done, the pelvis of the kidney ruptured, and there was a discharge of bloody urine. As this seemingly pointed to an obstruction lower down, a bougie was passed into the ureter as far down as the pelvic brim, where it apparently became obstructed. The nozzle of a small irrigator was then inserted into the ureter, and an attempt was made to introduce fluid into the bladder in this way; but this also proved unsuccessful. An incision as for the ligation of the external iliac artery was then made, and through this the ureter was examined, but nothing abnormal was found. The kidney was thereupon replaced, and the wound closed with a small cigarette drain. The boy made an excellent recovery. He had no further pain, and there was no more blood in the urine. It seems as if the obstruction to the ureter must have been dislodged in the course of operative manipulations. Since then he had been operated on in another hospital for hernia.

CALCULI IN A HORSESHOE KIDNEY.

DR. CLARENCE A. McWILLIAMS presented a man, 36 years old, who was first seen two years ago. He had had vague attacks of discomfort in the left upper abdomen for probably ten years, but for the past two years these attacks had come with greater severity and at intervals of about three months. They began usually in the early morning, with uncomfortable pains in the left side of the back, extending around to the front of the abdomen, but not as far as the groin or penis. Some of these attacks developed into severe colic, doubling him up and requiring morphine. Following the attacks there would remain for a number of days soreness in the back. He never noticed any blood in the urine nor any disturbance in micturition. He had lost no weight. Between the attacks he was perfectly well, excepting for occasional soreness in the left kidney region.

On January 31, 1907, an X-ray photograph clearly showed the presence in the left kidney of four calculi, each of about the size of a lima bean. The single upper stone was separated by about an inch from two calculi which lay close together, and these in turn were about an inch distant from a single lower stone. Operation, although advised, was put off. Four months later another X-ray photograph showed the stones even more clearly, and separated a little further from each other. An X-ray was also taken of the course of the ureter, but it was found to be free of calculi.

In February, 1908, one year after the patient was first seen, he finally consented to an operation. His urine at that time had a specific gravity of 1023; it was acid and contained a large amount of sediment composed of oxalates and amorphous phosphates; indican was present in excess, also albumin, pus, and red blood-cells, the latter being both altered (colorless) and unaltered (possessing haemoglobin); and a large number of mucous shreds, many containing leucocytes. The inorganic salts, the chlorides, phosphates, and sulphates, were all increased above the normal amounts. Peculiar concretions of ammoniomagnesium phosphates were observed; this, together with the excessive secretion of oxalates, might have had a bearing on the formation of the renal calculi. There was no increased frequency of micturition.

Operation, Feb., 1908.—An oblique incision was made, beginning just below the rib margin, extending from the outer edge of the erector spinae downwards and inwards to just within the anterior superior spine. This incision, which at first was small, later had to be twice enlarged downwards. The kidney seemed to be somewhat prolapsed and presented at once when the fat was torn through, care being taken not to injure the fibrous capsule, so as to limit bleeding. Great difficulty was experienced in drawing the kidney into the wound. The upper pole was easily separated from its fatty capsule, but below something seemed to bind the organ firmly in its place. It was finally recognized that this was a firm mass of tissue, continuous with the kidney substance itself, which tapered out into a tail about an inch and a half wide. This curved inwards and crossed the spinal column transversely, and it was then recognized as a horseshoe kidney. The ureter passed behind this central mass. The kidney could be brought into the wound only to a slight degree, so that further procedures had to be performed in a cavity which was unusually deep because of the obesity of the patient. Palpation of the kidney, with the fingers and thumb on opposite sides, revealed the presence of calculi only by a grating which was clearly appreciated, but the calculi themselves could not be felt. The pedicle was isolated, a soft rubber catheter was passed around it, drawn tight, and clamped, with the object of controlling the hemorrhage. An incision was then made along the convex border of the kidney. This was followed by a very free hemorrhage which ceased on drawing

the catheter tighter. Four stones were found in three calices, two being adjacent to each other in the central calyx, and producing the grating sensation already referred to. By breaking through the kidney tissue, the four calculi were easily removed with the finger. The kidney surfaces were brought together with five plain catgut interrupted sutures passed through the kidney substance, and a cigarette drain was placed down to the lower extremity of the cavity. The abdominal wall was closed in layers with chromic catgut sutures.

At the completion of the operation, which occupied one hour, the patient's pulse was 80, but weak. On the second day the escaping urine wet the dressings and this continued for about ten days, necessitating changing the dressings three times in twenty-four hours. Ten days after the operation, 58 ounces of urine were passed, and a specimen of the total output for twenty-four hours showed it to be turbid and red in color; acid, sp. gr. 1012, with the chlorides, phosphates, and sulphates all below the normal. The urine contained a large amount of albumin and blood, a trace of pus, with hyaline, granular, epithelial, waxy, and blood casts.

The patient's recovery was uneventful, and he left the hospital on the twenty-fourth day. Two weeks later the urine showed but a very small trace of albumin, no blood nor pus, and a few granular and hyaline casts. It was six weeks, however, before the sinus left by the wound finally closed. This Dr. McWilliams attributed to a slight infection from the pelvis of the kidney of the large cavity made at the time of the operation.

The man's present condition, one year after the operation, was entirely satisfactory. An examination of the urine made on Feb. 9, 1909, showed it to be perfectly clear, acid, sp. gr. 1016; no indican, blood, nor pus; no casts nor crystals; and a normal amount of urea. There was no disturbance of micturition.

The speaker said that on looking up the subject of horseshoe kidney, he found that it occurred 30 times in 21,218 autopsies, or once in 707 cases. In all but two of these, the band of renal tissue joined the lower poles of the two kidneys, while in the two the upper poles were so united. The great vessels habitually lay behind the central transverse mass, and, as a rule, and unlike the case he had shown, the ureters descended in front of it.

INTESTINAL OBSTRUCTION DUE TO GALL-STONES.

DR. WILLIAM A. DOWNES presented a woman, 62 years old, who was admitted to St. Francis Hospital in the service of Dr. Kammerer on April 8, 1908. For the past ten years she had been subject to severe attacks of abdominal pain, most marked in the right hypochondriac region. The pain was usually relieved by home remedies and she did not recall having been treated by a physician. Her last attack had occurred some months before. She had never been jaundiced and there was no loss of flesh nor strength.

Seven days prior to her admission to the hospital she began to have a moderate amount of abdominal pain, accompanied by nausea and vomiting. The vomitus consisted of stomach contents and bile up to twenty-four hours before admission; then it became fecal in character. There had been no movement of the bowels since the vomiting commenced. On examination, the abdomen was found greatly distended, but not tender nor rigid. Her pulse and temperature were normal, and her general condition was fair.

Dr. Downes made a small incision through the middle of the right rectus, through which two fingers were introduced to explore the ileocecal region. He came almost immediately upon a loop of intestine containing a hard body the size of a hickory nut, which proved to be a gall-stone. It was situated about ten inches from the ileocecal junction. This loop of intestine was drawn out of the wound and an intestinal clamp placed across the gut proximal to the stone, which was then removed.

The vomiting ceased immediately after the operation, and flatus in large quantities escaped per rectum on the following day. On the second day, vomiting recurred and the patient again showed all the symptoms of complete obstruction. This was attributed to some defect in the original operation. Accordingly, the wound was opened and the operated loop of intestine drawn out. The suture line was found to be perfect, but the intestine below was collapsed and the same condition obtained proximally for about eight inches. At this point another foreign body was felt in the lumen of the gut, which proved to be a second gall-stone, considerably larger than the first. It seemed that the ileum from this point was unusually narrow, for it was with difficulty that the stone could be forced down into the collapsed portion.

In view of the poor condition of the patient, it was thought best to form an immediate artificial anus. A good-sized portion of the convex surface of the intestine at the site of the obstruction was sutured to the peritoneum, an incision was made, and the gall-stone removed. A large rubber tube was introduced into the proximal loop and held in place by suture.

The patient's further convalescence was uninterrupted. Two attempts were made to close the fecal fistula, but without success. It was then decided that the easiest and surest way would be to exclude the narrow portion of the ileum, including the fistula. On July 2, 1908, through a left rectus incision, he formed a lateral anastomosis between the ileum, about twelve inches proximal to the fistula, and the sigmoid. This diverted the fecal current completely for about six weeks, and then the fistula began to discharge off and on. On August 27 he exposed the loop of gut, including the fistula, and found the gut too narrow to do an end-to-end suture. He thereupon closed the ends and did a lateral anastomosis. Since then the patient had remained perfectly well.

OPERATION FOR DOUBLE HALLEX VALGUS.

DR. ROBERT H. M. DAWBARN presented a patient for whom he had operated for the relief of double hallex valgus. In connection with this case, Dr. Dawbarn described and demonstrated the various steps of the operation which he had found successful in dealing with this deformity.

OBSERVATIONS ON RENAL AND URETERAL CALCULI.

DR. GEORGE WOOLSEY read a paper with the above title, for which see page 670.

DR. F. TILDEN BROWN said the case reported at this meeting by Dr. Eliot as well as one of Dr. Woolsey's cases conclusively demonstrated that no matter how efficiently an application of the X-ray was made, and no matter by how expert a professional the plates were interpreted, it was at times impossible to say whether a shadow represented a ureteral stone, or one of these resembling bodies. In Dr. Eliot's case, the appearance and location of the shadow in relation to the spine of the ischium, taken in conjunction with the presence of a stone in the bladder, made it very probable that the dealings were also with a stone in the ureter; but this was subsequently shown to be erroneous. In Dr. Wool-

sey's case also it was only by surgical exploration that the identity of the shadows was shown, or could have been proven to be what it was.

Dr. Brown said that in one of his own cases two of the leading X-ray exponents in New York were strongly of the opinion that a certain shadow along the line of the ureter was not a stone, while personally he was inclined to believe that it was. That fact was subsequently confirmed by the use of X-rays in conjunction with the stytelled catheter, which he looked upon as superior to any other method in the differential diagnosis of these often puzzling cases.

In discussing drainage of the abdomen and viscera, Dr. Brown said that where the ordinary scissor-backed rubber tube was employed—unless it was so soft and flabby as to be useless—he believed that it was an object of danger. On the other hand, he thought it was a mistake to condemn all tubal drainage and insist on the use only of the cigarette or gauze drain. If one used some form of smooth-eyed catheter, or particularly the Carlton angled tube or catheter, the serious consequences that are being reported would probably be obviated.

In connection with this general subject, Dr. Brown exhibited an X-ray picture showing a congenital diverticulum of the bladder which had given rise to symptoms simulating those of a ureteral calculus. These might also be produced by certain intra-abdominal lesions. He agreed with Dr. Woolsey that when once the diagnosis of ureteral stone had been made, we should not be in too great a hurry to operate. One method of treatment that he had found efficacious in some cases was to introduce a ureteral catheter beyond the point of obstruction and then inject some form of oil or water, hoping by either the catheter's stretching, or the changed position of the stone, or the back pressure produced by the fluid to hasten the descent of the calculus. In most instances, early delivery of the stone would follow this manipulation, while in other cases its further descent would result and could be demonstrated by the X-ray observations. In the case reported by Dr. Mathews, where no ureteral stone was found in spite of the immediate and complete disappearance of symptoms, the calculus might have become displaced from the pelvic end of the ureter into one of the calyces, or it possibly escaped at the time of the rupture of the kidney pelvis. The danger of hemor-

rhage from the cortex of the kidney, to which one of the speakers referred, could usually be easily controlled either by pressure or by a single suture, but when we had to deal with a stone the removal of which necessitated the tearing of the neck of the calyx, vessels of considerable size are involved and their injury had been followed by dangerous and even fatal bleeding. The choice of routes for removal lies of course in a longitudinal slit in the posterior wall of the pelvis.

DR. L. W. HOTCHKISS reported the case of a woman whose symptoms pointed to a stone in the kidney. An X-ray was taken, which showed a stone of fair size apparently lying in the pelvis or upper ureter. Upon operation, no renal or ureteral calculus was found, and further exploration revealed a movable liver, with a low-lying gall-bladder. This contained a biliary calculus, and rested upon the upper part of the right ureter.

DR. F. K. MURRAY said that the use of the X-ray has been of great assistance in making a correct diagnosis; and when combined with a careful study of the clinical history of the case, the diagnosis should be made in the majority of cases. As there is no single symptom or group of symptoms which can be considered as characteristic of stone in the kidney or ureter, a diagnosis founded upon the study of symptoms will be more or less uncertain. Reliance solely on the X-ray examination will be disappointing at times; and in the use of this means of diagnosis an expert photographer furnished with the very best apparatus is indispensable. The use of the compression diaphragm is of great assistance; and in several cases of his its employment had clearly detected stones which were very faint or absent when pictures were taken without using the diaphragm.

Stones of considerable size may exist in the parenchyma of the kidney without giving rise to symptoms, and their presence is only detected by the use of the X-ray. A few years ago, he saw a lady who had a sinus in the right lumbar region following the opening of a large abscess some time previously. As the urine was persistent and led directly down to the lumbar vertebrae, it was considered a bone lesion, probably of a tuberculous nature. There were no symptoms which would lead one to suspect the kidney, but he had an X-ray picture taken after injecting the sinus with bismuth. The sinus was found to move towards the spine and then turn at right angles towards the kid-

ney, where it divided into two branches, each of which led to a good-sized stone in the parenchyma.

Just a brief reference to a case in which a renal calculus was detected by the X-ray, while the symptoms were due to another lesion. An elderly man had complained for three years of pain and soreness in the region of the left kidney, and as medical measures had failed to give him relief, he demanded operation. Beyond the existence of a pyelitis nothing apparently definite was found until an X-ray picture revealed a small stone in the parenchyma. In the course of a nephrolithotomy a small abscess was found in the lower pole and opening into the pelvis of the kidney. Cultures of the pus from the abscess gave a pure culture of the typhoid germ; and on autopsy some ten days afterwards similar results were obtained from cultures taken from the abscess cavity and the hilus of the kidney. Cultures from the hilus of the opposite kidney were sterile. It was a case of typhoid abscess and pyelitis, not one of calculus, as the stone was a very small one and had practically caused no destruction of the parenchyma. The man had had two attacks of typhoid fever, one sixteen years ago, the second five years ago, and he undoubtedly had been carrying and spreading typhoid germs for at least three years. Cultures of the blood were also negative, and death was due to bronchopneumonia.

Concerning the treatment of ureteral calculus, an expectant attitude would be maintained, where the X-ray reveals a small stone, as in the majority of cases they are passed naturally in the bladder.

AN IMPROVED IODOFORM EMULSION.

DR. THEODORE DUNHAM, in exhibiting a specimen of this improved emulsion, said that his purposes in modifying the iodoform emulsion, or more accurately, suspension, had been two: in the first place, to produce a sterile emulsion; and in the second place, one which should be immediately antiseptic, before the decomposition of the iodoform began to take place. It had been shown that iodoform itself was not an antiseptic, but owed its antiseptic property to its ready decomposition, with the liberation of iodine. It was, therefore, possible that iodoform powder might chance to contain pyogenic organisms. An emulsion made by mixing iodoform powder with glycerin could not be satisfactorily

sterilized by heat, for on the application of heat the iodoform lost its finely divided state and passed into a condition of coarse particles, and there was no longer a fine emulsion or suspension. Dr. Dunham said his two purposes of producing a sterile and antiseptic emulsion had been accomplished by adding free iodine to the mixture, depending upon the iodine to sterilize the iodoform and also to act at once as an antiseptic in the wound. The iodine was held in solution by potassium iodide.

The emulsion was prepared as follows: To 100 c.c. of glycerin he added one gramme each of pure iodine and of potassium iodide. The vessel containing these three ingredients was placed in an Arnold sterilizer. After the sterilizer had boiled for a time, the mixture was shaken, when it would be found that the iodine had gone into solution. The solution was allowed to cool. Ten grammes of powdered iodoform were then incorporated with the solution by grinding in a sterile mortar.

Dr. Dunham said he devised this emulsion a number of years ago and had used it in many obstinate suppurative conditions with such satisfactory results that he thought it worth reporting.